## ORIGINAL ARTICLE



# Violence against women and perceived health: An observational survey of patients treated in the multidisciplinary structure 'The Women's House' and two Family Planning Centres in the metropolitan Paris area

Noémie Roland MD, MPH<sup>1</sup> | Yélian Ahogbehossou MD, MPH<sup>1,2</sup> | Ghada Hatem MD<sup>1,3</sup> | Leila Yacini MD<sup>4</sup> | Laure Feldmann MD<sup>5</sup> | Marie-Josèphe Saurel-Cubizolles MD, MPH<sup>6</sup> | Marc Bardou MD, PhD<sup>7,8</sup>

<sup>2</sup>Université de Lorraine, Faculté de médecine de Nancy, Vandœuvre-lès-Nancy Cedex, France

<sup>3</sup>Service de gynécologie et obstétrique, Centre Hospitalier de Saint Denis, Saint-Denis, France

<sup>4</sup>Centre de Santé Municipal "Les Moulins", Saint-Denis, France

<sup>5</sup>Centre de Santé Municipal "Docteur Pesqué", Aubervilliers, France

<sup>6</sup>INSERM (French Institute of Medical Research), UMR 1153 - Obstetrical, Perinatal and Pediatric Epidemiology Research Team (EPOPé) Centre of Research in Epidemiology and Statistics -Sorbonne Paris Cité, Paris Descartes University, Paris, France

<sup>7</sup>CIC 1432 (Center for Clinical Investigation), CHU Dijon Bourgogne, Dijon, France

<sup>8</sup>Université Bourgogne Franche Comté, UFR des Sciences Santé, Dijon, France

### Correspondence

Noémie Roland, La Maison des femmes, 1 Chemin du Moulin Basset, 93200 Saint-Denis, France.

Email: noemie.roland@ansm.sante.fr

## Funding information

The study was funded by crowed funding and promoted by the Dijon Bourgogne's Teaching hospital.

#### **Abstract**

It is unknown how many women seeking care at French Family Planning Centres (FPCs) endure, or have endured intimate partner violence (IPV). To assess the prevalence of IPV, we surveyed women seeking care at three FPCs in the metropolitan Paris area (Seine-Saint-Denis). We examined the associations between IPV, sociodemographic characteristics and perceptions of health according to six indicators. Of the FPCs included in our survey, two are standalone facilities and one is located in The Women's Home, a multidisciplinary structure dedicated to serving survivors of violence. We conducted an observational survey from December 2018 to February 2019. All women aged 18 years and older were eligible. We solicited data on sociodemographic factors, general stability and history of violence. We measured health status on a 10-point scale for six different symptoms. Of the 274 women who participated, 27% had experienced IPV. Women who reported experiencing, or having experienced IPV were more likely to be between 25 and 44 years old (than under 25), temporarily documented or undocumented, unemployed or seeking employment, and experiencing housing insecurity. Women seeking care at The Women's House were more than twice as likely to report IPV (42%) than those visiting FPC-2 or FPC-3 (20% and 16%, respectively). Reports of violence increase among women with uncertain legal status, housing, employment and lower self-rated health. Results suggest that a FPC located in a structure specifically dedicated to serving women victims-survivors of violence like the Women's House may be more attractive to survivors.

## **KEYWORDS**

family planning, gender-based violence, health status, inter-professional relations, intimate partner violence, sexual and reproductive health, social deprivation

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made. © 2022 The Authors. Health and Social Care in the Community published by John Wiley & Sons Ltd.

<sup>&</sup>lt;sup>1</sup>La Maison des femmes, Saint-Denis,

## 1 | INTRODUCTION

Violence against women is a profound violation of women's rights and a serious public health problem (World Health Organization, 2010). Intimate partner violence (IPV) is defined as 'physical, sexual, emotional, economic or psychological actions or threats of action that influence another person' (United Nations Women, 2010). Worldwide, one third of women report having been exposed to physical or sexual violence by a partner or non-partner according to the World Health Organization (WHO, 2010). Worldwide, 19.8% of pregnant women suffer IPV (WHO, 2005) and low socio-economic status is a risk factor for IPV among pregnant women (James et al., 2013). In Europe, the 2014 European Union Agency for Fundamental Rights survey (2012) found that 33% of women had survived physical and/or sexual violence by a partner or non-partner. In France, about 219,000 women aged 18-75 years endure physical and/or sexual intimate (ex-) partner violence each year (Ministerial Statistical Institute of Internal Security, 2018). Every 2.5 days, one French woman dies because of IPV (Inter-ministerial Mission on Women Protection & Against Human Trafficking, 2018).

Violence against women has serious consequences on the physical, mental and sexual health of victims-survivors (Campbell, 2002; Coker et al., 2002). Reproductive health is particularly threatened since violent partners may force sexual intercourse, refuse to use contraception during intercourse, and restrict women's access to healthcare facilities (Miller et al., 2010). Women victims-survivors of IPV are more likely to seek abortions (Coker, 2007; Fanslow et al., 2008), to contract sexually transmitted infections (STIs), to suffer sexual trauma and to develop pelvic inflammatory disease than non-abused women (Hunter et al., 2017; Sharman et al., 2018). In addition, female survivors of violence have a higher prevalence of anxiety disorders (Trevillion et al., 2012), sleep disorders (Pengpid & Peltzer, 2020), depression (Beydoun et al., 1982) and post-traumatic stress disorder (PTSD) (Husky et al., 2015; Jaspard et al., 2001; McCauley et al., 1995). They also have more gynaecological and obstetrical disorders (Silverman et al., 2006). They have more encounters with health professionals and use more medication than women who do not endure IPV (Stark & Flitcraft, 1988).

In France, women of child-bearing age (even under 18 years of age) can turn to Family Planning Centres (FPCs) which offer contraception and abortion services. The prevalence of IPV among women visiting a French FPC has not been well evaluated. We hypothesised that this prevalence was high, especially in FPCs located in densely populated neighbourhoods. A study published in 2009 determined that 23% of women living in France and seeking abortions did so as a result of IPV (Sarafis, 2009), but little is known about their experience of IPV during their lifetime. The French department (county) with the highest rate of poverty in mainland France is Seine-Saint-Denis, located outside Paris (Bayardin et al., 2017). Studies have indicated that 58% of women attending one of the largest hospitals in Seine-Saint-Denis, the Delafontaine Hospital, live in very or semi-unstable conditions (Saint Denis Hospital Center, 2016). Seine-Saint-Denis was thus an ideal site

## What is known about this topic:

- Violence against women has a negative impact on the reproductive health of victims-survivors.
- There is a notable lack of scholarship examining the prevalence of lifetime spousal violence among women visiting Family Planning Centres (FPCs) in France.
- Survivors of violence, especially those living in unstable conditions, face substantial barriers to accessing multidisciplinary healthcare services.

### What this paper adds:

- More than 25% of women who visited Family Planning Centres in a metropolitan Paris low socio-economic area report enduring intimate partner violence (IPV).
- Women who report a history of IPV seem to prefer to seek care at the FPC located within The Women's House, a multidisciplinary structure that combats gender-based violence through informed medical, psychological and social care.

for conducting the first French study to examine the relationship between socio-economic factors and the overall health status of abused women visiting FPCs.

We aimed to assess for the first time the prevalence of IPV among women consulting at three FPCs in Seine-Saint-Denis: two standalone municipal FPCs and one FPC located within a structure dedicated to providing care to female survivors of violence, 'La Maison des Femmes' ('The Women's House') (https://www.lamai sondesfemmes.fr/). Then, we sought to explore the relationship between women's socio-demographic characteristics, perception of their own health and the violence they had suffered.

### 2 | METHODS

## 2.1 Data sources and study population

We carried out an observational survey from December 2018 to February 2019 in three FPCs in the department of Seine-Saint-Denis: the 'Maison des femmes' (MDF, 'The Women's House') adjacent to, and affiliated with, the Delafontaine hospital (FPC-1); 'Les Moulins', a municipal health centre in the city of Saint-Denis (FPC-2) and a municipal health centre in Aubervilliers, a neighbouring city (FPC-3). The MDF was created specifically to accommodate all female victim survivors of gender-based violence. Women visiting the MDF can consult with clinicians (doctors, midwives, psychologists, surgeons), and affiliated non-clinical teams (social workers, police officers, lawyers, athletic, creative therapists, etc.).

All women aged 18 years and older were eligible for our study. Volunteers were waiting in the FPCs to ask women to participate.

Participation was voluntary and oral informed consent was obtained from all participants. Women were offered a self-administrated paper questionnaire, but those who had difficulty understanding could ask for assistance from volunteers administering this survey. Interpreters were contacted by phone when necessary. Volunteers also reviewed questionnaires with each woman to minimise the possibility of missing data.

The standardised questionnaire was identical in all three FPCs and had four parts: (1) social and demographic characteristics; (2) perceived health status; (3) women's knowledge about sexuality and (4) violence they may have suffered.

This study serves as a pilot for the ongoing 'Avec-L' study for which The Committee for the Protection of Persons of Ile de France 6 provided ethical approval. As recommended by the WHO, our study aimed to minimise safety risks for respondents (World Health Organization. Regional Office for the Eastern Mediterranean, 2013): we maintained confidentiality and security, offered informed consent and provided basic care and locally available support.

## 2.2 | Indicators

The main outcome of this study was having been subjected to violence by a current or former intimate partner in their lifetime. The question used in the questionnaire for the outcome was: "Have you ever been subjected to Intimate Partner Violence (for example: ever been hit, threatened or belittled, had sex that you did not want)?". The answer was binary (Yes/No).

We evaluated the following explanatory socio-demographic variables: place of residence, age, region of birth, legal status, living situation, number of children, education level, employment status, health coverage. We used the EPICES Score (Evaluation de la Précarité et des Inégalités de Santé dans les Centres d'Examens de Santé/ Evaluation of Health Precariousness and Inequalities in Health Examination Centers) (Labbe et al., 2015) to assess the instability and danger of living conditions. The EPICES Score is compiled from 11 yes-or-no questions. Each answer is assigned a coefficient and the 11 answers are summed to provide the score. The score is continuous, ranging from 0 (absence of instability) to 100 (maximum of instability). We categorised the score into four classes corresponding to the quartiles of the overall sample.

Perceived health status was also an explanatory variable and was measured with the question: 'How would you rate your health?'. Participants responded on a Likert scale from 0 (very poor) to 10 (very good) for each of the following symptoms: sleep, diet, mood, concentration, memory and general health. We constructed an indicator for each system in three categories to sort responses into bad (0–4), average (5–7) or good (8–10). We constructed an indicator by summing the scores attributed to the six symptoms to obtain a global index of perceived health. This index is graduated from 0 to 60 and broken into three classes that correspond to the tertiles of the global sample.

# 2.3 | Analysis strategy

The data were entered by volunteer interviewers on secured google forms, then extracted into an Excel table and transferred to a SAS table for statistical analysis. All analyses were performed with SAS® version 9.4 software.

We initially planned to include responses from 100 women in each of the FPCs. We described the characteristics of the sample in terms of distribution frequency: socio-demographic characteristics, perceived health status, IPV and the effect violence had on their health. We used bivariate and then multivariate analyses (adjustment for age, instability and centre) to study the associations between having suffered violence and socio-demographic characteristics or perceived health symptoms. We calculated crude odds ratios (OR) and adjusted ORs (aOR) expressed with their 95% confidence intervals (CI) in logistic regression models. A *p*-value <0.05 was considered to be statistically significant.

### 3 | RESULTS

# 3.1 | Socio-demographic characteristics of the sample

A total of 274 women completed the questionnaire at the three FPCs and were included in the study from December 2018 to February 2019 (100 at FPC-1; 100 at FCP-2; 74 at FPC-3). Their characteristics are summarised in Table 1. Of these, 234 (85%), lived in Seine-Saint-Denis, a third were younger than 25 years old; half were born outside France, most in sub-Saharan Africa; 41 (15%) were temporarily documented or undocumented. Only 113 (42%) lived with a partner, more than a half had at least one child, 35 (13%) did not have a high school diploma, while a third had one. Women who were stay-at-home mothers or not in the labour force accounted for one third of the participants, and 18% were seeking a job or unemployed; a third lived in shelters; and just under three-quarters were in an unstable living situation.

## 3.2 | Violence suffered

Of the 274 women who answered the survey, 74 (27%; 95% CI: 21%–32%) were victims-survivors of IPV. Of these, three-quarters thought the violence impacted their health and a third had never previously mentioned IPV before a medical consultation. A greater difference in the prevalence of IPV was found between women seeking care at FPC-1 than FPC-2 and FPC-3 (42.0%, 20.0% and 16.2%, respectively).

# 3.3 | Associations between socio-demographic characteristics and histories of violence

Results are presented in Table 2. Women aged 25-44 were about three times more likely to have suffered violence than women under

TABLE 1 Socio-demographic characteristics of the sample

| Characteristics of participants                                | N (%)      |
|--|------------|
| Place of residence   |            |
| Seine-Saint-Denis  | 219 (85.2) |
| Others   | 38 (14.8)  |
| Age (Years)  |            |
| <25  | 82 (30.4)  |
| [25-34]  | 94 (34.8)  |
| [35-44]  | 54 (20.0)  |
| ≥45  | 40 (14.8)  |
| Region of birth  |            |
| France   | 125 (46.6) |
| Maghreb (Algeria, Morocco, Tunisia)                            | 53 (19.8)  |
| Sub-Saharan Africa   | 62 (23.1)  |
| Other countries  | 28 (10.5)  |
| Legal status   |            |
| Documented   | 224 (84.5) |
| Temporarily documented or undocumented                         | 41 (15.5)  |
| Lives in a couple  |            |
| No   | 224 (57.7) |
| Yes  | 41 (15.5)  |
| Has one or more children                                       |            |
| No   | 100 (38.5) |
| Yes  | 160 (61.5) |
| If yes, number of children                                     |            |
| 1 child  | 40 (27.0)  |
| 2 children   | 51 (34.5)  |
| 3 children   | 29 (19.6)  |
| 4 and more children  | 28 (18.9)  |
| Educational level  |            |
| Out of school or primary school                                | 35 (13.4)  |
| College  | 29 (11.1)  |
| High School  | 101 (38.7) |
| University   | 96 (36.8)  |
| Employment   |            |
| At home, inactive  | 85 (33.3)  |
| Looking for work, unemployed                                   | 45 (17.7)  |
| Active   | 125 (49.0) |
| Health insurance   |            |
| No   | 30 (11.3)  |
| Yes  | 236 (88.7) |
| Housing  |            |
| Tenant of the accommodation                                    | 160 (59.5) |
| Owner of the accommodation                                     | 23 (8.5)   |
| Hosted   | 86 (32.0)  |
| Instability: EPICES score from 0 to 100                        |            |
| General instability according to the EPICES Score standard >30 | 177 (73.1) |
|  |            |

TABLE 1 (Continued)

| Characteristics of participants     | N (%)     |
|-------------------------------------|-----------|
| EPICES score quartiles <sup>a</sup> |           |
| Not unstable <27.21                 | 59 (24.4) |
| Slightly unstable <45.00            | 61 (25.2) |
| Unstable <61.00                     | 61 (25.2) |
| Highly unstable ≥61.00              | 61 (25.2) |

<sup>&</sup>lt;sup>a</sup>Four classes corresponding to the quartiles of the EPICES score over the whole sample.

25 or over 45 even after adjusting for general instability and centre (aOR $_{25-34}=3.32$ , and aOR $_{35-44}=2.72$ ). The same was observed for women with uncertain legal status (OR = 3.56) and unemployed women (OR = 2.54).

## 3.4 | Perceived health status of participants

Data on perceived health status are reported in Table 3. The sum of the six symptoms gives a mean of 40 out of 60 with a standard deviation of 11.77, corresponding to 'average' perceived health status. The women were almost equally distributed across the three categories of the perceived health status, mediocre, medium and good.

# 3.5 | Association between having experienced violence and perceived health status

Results are presented in Table 4. Having experienced IPV was significantly associated with reporting poor sleep (OR = 5.13), poor nutrition (OR = 4.68), bad mood (OR = 9.58), poor concentration (OR = 4.20), bad memory (OR = 2.38), poor health in general (OR = 4.85) and poor index of perceived health (OR = 8.82) (p < 0.001 for all these ORs).

After adjusting for age, FPC visited and level of instability, having suffered violence remained associated with a significant 2.5–5 folds increased risk of reporting poor sleep (aOR = 2.53), poor general health (aOR = 3.04), having a poor diet (aOR = 4.25;1.85–9.80, p < 0.01), a bad mood (aOR = 4.96) or a poor perceived health index (aOR = 4.06) (See Table 4).

### 4 | Discussion

Violence was associated with both a reduced perceived state of health and living in generally unstable conditions among the women we surveyed. More than one fourth of women who visited the three FPCs claimed to have suffered IPV. Women aged 25–34 and 35–44 years were around three times more likely than women below 25 years or above 45 years to have experienced violence in their lifetime.

TABLE 2 Percentages of women who have experienced violence by socio-demographic characteristics, crude and adjusted odds ratios

| Socio-demographic characteristics         | Women who have suffered violence N (%) | crude OR<br>[CI 95%] | p value | OR adjusted for age, instability and center [CI 95%] | p value |
|---|--|----------------------|---------|--|---------|
| Age (Years)                               | 71                                     | 270                  | 0.0093  | 239  | 0.0548  |
| <25                                       | 12 (14.6%)                             | 1                    |         | 1  |         |
| [25-34]                                   | 34 (36.2%)                             | 3.31 [1.57-6.95]     |         | 3.32 [1.37-7.64]                                     |         |
| [35-44]                                   | 17 (31.5%)                             | 2.68 [1.16-6.21]     |         | 2.72 [1.05-7.03]                                     |         |
| ≥45                                       | 8 (20.0%)                              | 1.46 [0.54-3.92]     |         | 2.26 [0.75-6.86]                                     |         |
| Region of birth                           | 73                                     | 268                  | 0.2423  |  |         |
| France                                    | 32 (25.6%)                             | 1                    |         |  |         |
| Maghreb (Algeria, Morocco, Tunisia)       | 12 (22.6%)                             | 0.85 [0.40-1.82]     |         |  |         |
| Sub-Saharan Africa                        | 23 (37.1%)                             | 1.71 [0.98-3.30]     |         |  |         |
| Other countries                           | 6 (21.4%)                              | 0.73 [0.30-2.13]     |         |  |         |
| Length of stay in France (immigrants)     | 40                                     | 142                  | 0.2369  |  |         |
| Duration ≤3 years                         | 16 (37.2%)                             | 2.30 [0.85-6.20]     | 0.2007  |  |         |
| Duration: [4,15] years                    | 16 (26.7%)                             | 1.41 [0.54-3.70]     |         |  |         |
| Duration >15 years                        | 8 (20.5%)                              | 1                    |         |  |         |
| Living in a couple                        | 74                                     | 267                  | 0.0818  |  |         |
| No  | 49 (31.8%)                             | 1.64 [0.94-2.87]     | 0.0010  |  |         |
| Yes                                       | 25 (22.1%)                             | 1.04 [0.74-2.07]     |         |  |         |
| Educational level                         | 73                                     | 261                  | 0.5605  |  |         |
| Out of school/primary                     | 12 (34.3%)                             | 1.66 [0.71-3.84]     | 0.3603  |  |         |
|   |  | -                    |         |  |         |
| College                                   | 10 (34.5%)                             | 1.67 [0.68-4.10]     |         |  |         |
| High school                               | 28 (27.7%)                             | 1.22 [0.64-2.31]     |         |  |         |
| University                                | 23 (24.0%)                             | 1                    | 0.000/  |  |         |
| Employment                                | 68                                     | 254                  | 0.0026  |  |         |
| At home, inactive                         | 15 (17.9%)                             | 0.63 [0.32-1.26]     |         |  |         |
| Looking for jobs-unemployment             | 21 (46.7%)                             | 2.54 [1.25-5.17]     |         |  |         |
| Workforce                                 | 32 (25.6%)                             | 1                    |         |  |         |
| Housing                                   | 71                                     | 269                  | 0.0630  |  |         |
| Personal housing                          | 42 (22.9%)                             | 1                    |         |  |         |
| Lodging accommodation                     | 29 (33.7%)                             | 1.71 [0.97-3.00]     |         |  |         |
| Legal status                              | 72                                     | 265                  | 0.0003  |  |         |
| Documented                                | 51 (22.7%)                             | 1                    |         |  |         |
| Temporarily documented or<br>undocumented | 21 (51.2%)                             | 3.56 [1.79-7.08]     |         |  |         |
| Precarious situation                      | 67                                     | 242                  | <0.0001 |  | 0.0071  |
| Not precarious                            | 7 (11.9%)                              | 1                    |         | 1  |         |
| Slightly precarious                       | 12 (19.7%)                             | 1.82 [0.66-4.99]     |         | 1.18 [0.60-4.92]                                     |         |
| Precarious                                | 18 (29.5%)                             | 3.11 [1.19-8.14]     |         | 2.58 [0.95-7.06]                                     |         |
| Highly precarious                         | 30 (49.2%)                             | 7.19 [2.82-18.31]    |         | 4.99 [1.86-13.34]                                    |         |
| Centre                                    | 74                                     | 274                  | 0.0002  |  | 0.0012  |
| FPC1                                      | 42 (42.0%)                             | 2.90 [1.54-5.44]     |         | 3.37 [1.60-7.11]                                     |         |
| FPC2                                      | 20 (20.0%)                             | 1                    |         | 1  |         |
| FPC3                                      | 12 (16.2%)                             | 0.77 [0.35-1.70]     |         | 0.95 [0.41-2.23]                                     |         |

*Note*: Numbers below 74 (total number of women who reported having suffered violence) reflect missing data Abbreviations: CI, confidence interval; OR, odds ratio.

TABLE 3 Description of perceived health status, average scores and classes selected for each symptom: sleep, diet, mood, concentration, memory, global health

|  | N   | Average score<br>(Standard deviation) | Mediocre perceived state |             | Medium perceived state |            | Good perceived state |            |
|--|-----|---------------------------------------|--------------------------|-------------|------------------------|------------|----------------------|------------|
|  |     |                                       | Note                     | N (%)       | Note                   | N (%)      | Note                 | N (%)      |
| Sleep<br>[0-10]                            | 264 | 5.80<br>(2.81)                        | [0-4]                    | 90 (34.1)   | [5-7]                  | 99 (37.5)  | [8-10]               | 75 (28.4)  |
| Diet<br>[0-10]                             | 258 | 7.37<br>(2.76)                        | [0-5]                    | 117 (45.3)  | [6-8]                  | 71 (27.5)  | [9-10]               | 70 (27.1)  |
| Mood<br>[0-10]                             | 259 | 6.06<br>(2.90)                        | [0-5]                    | 97 (37.4)   | [6-8]                  | 93 (35.9)  | [9-10]               | 69 (26.6)  |
| Concentration [0-10]                       | 261 | 6.44<br>(2.95)                        | [0-5]                    | 118 (45.2)  | [6-7]                  | 59 (22.6)  | [8-10]               | 84 (32.2)  |
| Memory<br>[0-10]                           | 262 | 7.12<br>(2.72)                        | [0-5]                    | 100 (38.2)  | [6-8]                  | 92 (35.1)  | [9-10]               | 70 (26.7)  |
| Global health<br>[0-10]                    | 263 | 7.00<br>(2.56)                        | [0-5]                    | 131 (49.8%) | [6-7]                  | 71 (27.0)  | [8-10]               | 61 (23.2)  |
| Perceived health index <sup>a</sup> [0-60] | 247 | 40.01<br>(11.77)                      | [0-35]                   | 92 (37.3%)  | [36-45]                | 72 (29.1%) | [46-60]              | 83 (33.6%) |

<sup>&</sup>lt;sup>a</sup>Sum of the scores for the six symptoms reported, the three classes correspond to the tertiles of the sample.

## 4.1 | IPV prevalence

Studies examining the prevalence of IPV among women attending FPCs in other countries report ranges from 11.4% in India (Chen et al., 2020) to 27% in Hong Kong (Leung et al., 2002). But these studies only surveyed women who suffered violence in the past year, while we considered lifetime history of violence. For the first time, this study surveyed women attending FPCs in a particularly low socio-economic area of France in order to evaluate the prevalence of IPV and serve as a basis for further research. Our study shows that 27% of women visiting a FPC had suffered IPV. This is slightly higher than the 23% reported in the only similar study conducted among survivors of recent abuse in France (Sarafis, 2009), and slightly less than the 30% reported by the WHO among the general population (Krug et al., 2002).

# 4.2 | A multidisciplinary structure, 'The Women's House'

Despite being geographically very close to each other, in the same low socio-economic neighbourhood, the proportion of women reporting IPV in the MDF was more than three time as high as in the two other centres. This suggests that women in the Paris area – and the professionals who often refer them – know that the MDF specialises in treating the direct and indirect physical, psychological and situational consequences of violence, and highlights the need of women who have been exposed to IPV for dedicated, and well identified, structures to take care of them.

The MDF is a structure specifically dedicated to the management of women exposed to violence. Founded in 2016, its unique model offers interdisciplinary care, combining health, social and judicial services in a single physical location (Géry, 2017). It offers not only contraception and abortion care but also legal counsel, psychological consultations, clitoral reconstruction surgeries and group therapy (among other services) in one place.

### 4.3 | Sociodemographic factors

International studies reported that youth is an individual risk factor for suffering IPV (Abramsky et al., 2011; David Martín-Baena et al., 2015), and women under the age of 25 are the most likely to experience violence (Sanz-Barbero et al., 2019). In our study, women aged 25-44 years were most likely to have suffered violence in their lifetime. Women of all ages responded to our questionnaire and we observed that women aged 35-44 years old were more likely to have experienced violence in their lifetimes than younger women (the fact that they have lived longer puts them at an increased risk of lifetime IPV). We hypothesised that younger women may also be more likely to minimise IPV, which intensifies and changes modalities over time. Women who have spent longer periods of their lives as part of a couple may thus be more able to identify IPV. We also hypothesise that young women may visit FPCs exclusively to obtain contraception or to end undesired pregnancies, and they may go elsewhere to discuss their abuse. Nevertheless, a study by Sanz-Barbero et al. (2019) using the same definition of exposure to IPV as ours found that the prevalence of IPV was greater among women aged 18-24 years. These discrepancies in both prevalence and risk factors for violence emphasise the need for further scholarship on the subject.

The association between low socio-economic status and higher risk of violence is often mentioned in the literature (Maciel et al., 2019). Our results support the argument that women in

TABLE 4 Perceived health status according to violence, percentages and crude and adjusted odds ratios

| Symptoms  | Women who have suffered violence |             | Courte OD            |         | OB adjusted   |         |
|---|----------------------------------|-------------|----------------------|---------|---|---------|
|   | Yes                              | No          | Crude OR<br>[CI 95%] | p value | OR adjusted for age, instability, and centre [CI 95%] | p value |
| Sleep<br>(N = 264)                                  | 73                               | 191         |                      | <0.0001 |   | 0.0589  |
| Good  | 15 (20.5%)                       | 75 (39.3%)  | 1                    |         | 1   |         |
| Medium  | 20 (27.4%)                       | 79 (41.4%)  | 1.27 [0.60-2.65]     |         | 1.18 [0.51-2.72]                                      |         |
| Mediocre  | 38 (52.1%)                       | 37 (49.3%)  | 5.13 [2.51-10.50]    |         | 2.53 [1.08-5.94]                                      |         |
| Diet<br>(N = 258)                                   | 72                               | 186         |                      | <0.0001 |   | 0.0020  |
| Good  | 17 (23.6%)                       | 100 (53.8%) | 1                    |         | 1   |         |
| Medium  | 24 (33.3%)                       | 47 (25.3%)  | 3.00 [1.47-6.12]     |         | 3.17 [1.35- 7.44]                                     |         |
| Mediocre  | 31 (43.1%)                       | 39 (20.9%)  | 4.68 [2.33-9.39]     |         | 4.25 [1.85- 9.80]                                     |         |
| Moral<br>( <i>N</i> = 259)                          | 72                               | 187         |                      | <0.0001 |   | 0.0054  |
| Good  | 11 (15.3%)                       | 86 (46.0%)  | 1                    |         | 1   |         |
| Medium  | 23 (31.9%)                       | 70 (37.4%)  | 2.57 [1.17-5.63]     |         | 2.75 [1.11-6.82]                                      |         |
| Mediocre  | 38 (52.8%)                       | 31 (16.6%)  | 9.58 [4.36-21.05]    |         | 4.96 [1.87-13.11]                                     |         |
| Concentration $(N = 261)$                           | 72                               | 189         |                      | <0.0001 |   | 0.1914  |
| Good  | 21 (29.2%)                       | 97 (51.3%)  | 1                    |         | 1   |         |
| Medium  | 11 (15.3%)                       | 48 (25.4%)  | 1.06 [0.47-2.37]     |         | 1.06 [0.44-2.56]                                      |         |
| Mediocre  | 40 (55.5%)                       | 44 (23.3%)  | 4.20 [2.22-7.94]     |         | 1.97 [0.90.2.29]                                      |         |
| Memory<br>(N = 262)                                 | 73                               | 189         |                      | 0.0013  |   | 0.3491  |
| Good  | 25 (34.2%)                       | 75 (39.7%)  | 1                    |         | 1   |         |
| Medium  | 17 (23.3%)                       | 75 (39.7%)  | 0.68 [0.34-1.36]     |         | 0.72 [0.32–1.61]                                      |         |
| Mediocre  | 31 (42.5%)                       | 39 (20.6%)  | 2.38 [1.24-4.58]     |         | 1.34 [0.62-2.91]                                      |         |
| Global health<br>(N = 263)                          | 72                               | 191         |                      | <0.0001 |   | 0.0275  |
| Good  | 23 (31.9%)                       | 108 (56.5%) | 1                    |         | 1   |         |
| Medium  | 18 (25.0%)                       | 53 (27.8%)  | 1.59 [0.79-3.21]     |         | 1.38 [0.60-3.17]                                      |         |
| Mediocre  | 21 (43.1%)                       | 30 (15.7%)  | 4.85 [2.47-9.52]     |         | 3.04 [1.33-6.92]                                      |         |
| Perceived<br>health index <sup>a</sup><br>(N = 247) | 70                               | 177         |                      | <0.0001 |   | 0.0127  |
| Good  | 10 (14.3%)                       | 82 (46.3%)  | 1                    |         | 1   |         |
| Medium  | 17 (24.3%)                       | 55 (31.1%)  | 2.53 [1.08-5.94]     |         | 2.52 [0.97-6.57]                                      |         |
| Mediocre  | 43 (61.4%)                       | 40 (22.6%)  | 8.82 [4.02-19.33]    |         | 4.06 [1.60-10.31]                                     |         |

Abbreviations: CI, confidence interval; OR, odds ratio.

vulnerable social situations are at an increased risk of IPV, especially those whose conditions are unstable due to their living situation, unemployment or employment issues, and irregular legal status. In the major reference survey in France on violence against women (ENVEF, Enquête Nationale sur les Violences Faites aux Femmes en France), the women most exposed to violence were unemployed, retired or working part time (Jaspard, 2011). In violent relationships, the perpetrator is often economically dominant and may prevent

his partner from seeking and holding a steady job. Social and economic risk factors of IPV have been widely studied (Ranganathan et al., 2021). Financial dependence is an obstacle to fleeing an abusive relationship, and perpetrators may perceive a partner's search for a job as a manifestation of autonomy.

Immigration status is a risk factor for gender violence in the country of origin, during migration route, or in the country of arrival. Our study aligns with other studies of immigration and IPV

<sup>&</sup>lt;sup>a</sup>Sum of the scores for the six reported symptoms, the three classes correspond to the tertiles of the sample.

(Sanz-Barbero et al., 2019). Immigrant women are often dependent upon their partner (confiscation of papers, lack of economic independence) and may find it hard to seek help (language barrier, isolation) (Amanor-Boadu et al., 2012). They may also be reluctant to seek help due to fear of deportation if they are illegally living in their country of arrival. Additionally, they may endure cultural pressures and may fear stigmatisation or bringing shame on their families. Gender inequalities exist in both French and other cultures worldwide (United Nations Development Programme, 2017), and cultural factors affect feelings of shame and perceptions of violence and knowledge of the possibilities of external aid (Liang et al., 2005; Overstreet & Quinn, 2013).

### 4.4 | Perceived health and violence

Our study found that women reported poorer health status if they had a history of violence. This aligns with the results of many international studies which found abused women suffered more mental and physical health problems than women who were not victims (Dillon et al., 2013). Women suffering from IPV have specific health-care needs. Further studies should examine the effectiveness of healthcare interventions for French victims-survivors of violence suffering from PTSD (Husky et al., 2015). In France, access to mental health services is unequal – particularly for the most disadvantaged women. There are few health structures that treat the medical side effects of abuse.

# 4.5 | Implications

Our findings have several major implications: first, this study confirms that the prevalence of IPV is high among women visiting a FPC in the poorest French department. Health and social workers should be aware of this reality. We recommend that FPCs systematically screen for IPV among their patients. Second, women dealing with past or present IPV seem to prefer to seek care in a structure like the Maison Des Femmes, a structure officially dedicated to dealing with IPV, where they can access several medical specialties, allied health and integrated services in one location. Abused women have specific needs and professionals must adapt interventions for every individual, especially for immigrant women (Kiamanesh & Hauge, 2019). Finally, developing such specialised structures could be a way to reduce health access inequalities for victims-survivors of violence and operational costs by co-locating all required professionals in one place.

## 4.6 | Strengths and limitations

One of the strengths of our study, which is unique in its kind, is that it compared the prevalence of IPV in three facilities located in the same deprived French department, in the Paris suburbs, but with

different organisations, the 'Maison des femmes' being the first French structure fully dedicated to, and specialised in, the care of women victims-survivors of IPV.

By eliminating the socio-economic and cultural variations of people in the area covered by these facilities, it shows that women who are victims of IPV prefer to consult a centre specifically dedicated to their care. This comparison reinforces the capacity to generalise our results. The high prevalence of violence identified in this study justifies the development of facilities that specialise in treating the physical, psychological and situational side effects of violence, which the French government has committed to doing by replicating the MDF's model across France (French Ministry of Gender Equality, 2021).

Our study was limited by the relatively small number of participants (274) so we could not make a detailed comparison of the characteristics of women from each of the three centres. There is an on-going AVEC-L study, an intervention project combining a pilot study, a qualitative study and a comparative trial, aimed to compare the health of adult women seeking care at the MDF and in two local FPCs. This study will increase the number of included women to strengthen robustness of our background results. Women may minimise or fail to identify violence in self-reports, which may lead to classification bias. Our survey did not ask women to share a chronology of violence or specify the types of violence, severity or repetition. Selection bias may also be present; women who refused to answer may have suffered more violence than women who were willing to complete the survey.

This cross-sectional study is not designed to identify causal links between antecedents of violence, socio-demographic characteristics and perceived health status. A causal link between level of instability and surviving violence is impossible to draw from this data, and the causal connection may run in either direction. The amplitude of association may be the sum of an effect in both directions. Causal relationship between poor health and a history of violence is equally hard to determine. The relationship between health status and surviving violence may be cumulative (the more traumatic episodes a woman experiences, the greater the impact on her health), or adaptive (a woman's environment and experience may positively or negatively modulate the effects of violence on her health over the short and long term).

# 5 | CONCLUSION

Our study reveals that reports of IPV increased with living condition instability and a poorer perception of health in a population visiting FPCs in Seine-Saint-Denis. The prevalence of IPV is higher in the FPC located in the 'Maison des femmes', (MDF) a specialised structure dedicated to the management of gender-based violence. Evaluating the physical and psychological health among victims-survivors of violence visiting FPCs could help clinicians to understand how to respond to the specific needs of their patients, and could highlight the need for global public health departmental policy.

The very positive perception of the women's House, both by the women who come to for consultation and by the public authorities, has already led to its reproduction on French territory. It is now necessary to set up actions to evaluate the medical and social service that these structures provide.

#### **ACKNOWLEDGEMENTS**

We thank the women who agreed to participate in the study, the staff who ran the interviews with the women and Dr. Fabienne El-KHOURI for her advice. We thank Jessica Spraos for her help in correcting and clarifying the manuscript.

#### **CONFLICT OF INTEREST**

The authors declare that they have no competing interests.

### **AUTHORS' CONTRIBUTION**

YA and MJSC conceived and designed the experiments. NR and YA performed the literature review. LY, LF and GH collected the data. YA, NR and MJSC analysed the data. NR and YA wrote the paper. MJSC, GH and MB reviewed the paper. Each author has confirmed compliance with the journal's requirements for authorship.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author, NR. The data are not publicly available due to their containing information that could compromise the privacy/safety of research participants.

### ORCID

Noémie Roland https://orcid.org/0000-0002-8079-4263
Yélian Ahogbehossou https://orcid.org/0000-0002-9964-6965
Ghada Hatem https://orcid.org/0000-0001-8841-4379
Marie-Josèphe Saurel-Cubizolles https://orcid.
org/0000-0002-2210-974X
Marc Bardou https://orcid.org/0000-0003-0028-1837

### REFERENCES

- Abramsky, T., Watts, C. H., Garcia-Moreno, C., Devries, K., Kiss, L., Ellsberg, M., Jansen, H. A. F. M., & Heise, L. (2011). What factors are associated with recent intimate partner violence? Findings from the WHO multi-country study on women's health and domestic violence. BMC Public Health, 11, 109. https://doi.org/10.1186/1471-2458-11-109
- Amanor-Boadu, Y., Messing, J. T., Stith, S. M., Anderson, J. R., O'Sullivan, C. S., & Campbell, J. C. (2012). Immigrant and nonimmigrant women: Factors that predict leaving an abusive relationship. *Violence Against Women*, 18(5), 611–633.
- Bayardin, V., Herviant, J., Jabot, D., Martinez, C., Chemineau, D., Glachant, E., & Guérin, D. (2017). En Ile-de-France, la pauvreté s'est intensifiée dans les territoires déjà les plus exposés (In Paris Region, poverty has worsened in the lower socio-economic districts). INSEE/Ctrad, Paris; 76. Retrieved August 10, 2020, from https://www.insee.fr/fr/statistiques/3291402
- Beydoun, H. A., Beydoun, M. A., Kaufman, J. S., Lo, B., & Zonderman, A. B. (1982). Intimate partner violence against adult women and its association with major depressive disorder, depressive symptoms and

post-partum depression: A systematic review and meta-analysis. *Social Science & Medecine*, 75(6), 959–975.

e4049

- Campbell, J. C. (2002). Health consequences of intimate partner violence. *The Lancet*, 359(9314), 1331–1336.
- Chen, G. L., Silverman, J. G., Dixit, A., Begum, S., Ghule, M., Battala, M., Johns, N. E., Raj, A., & Averbach, S. (2020). A cross-sectional analysis of intimate partner violence and family planning use in rural India. *EClinicalMedicine*, 21, 100318.
- Coker, A. (2007). Does physical intimate partner violence affect sexual health? A Systematic Review. *Trauma Violence Abuse*, 8(2), 149–177. https://doi.org/10.1177/1524838007301162
- Coker, A. L., Davis, K. E., Arias, I., Desai, S., Sanderson, M., Brandt, H. M., & Smith, P. H. (2002). Physical and mental health effects of intimate partner violence for men and women. *American Journal of Preventive Medicine*, 23(4), 260–268.
- Dillon, G., Hussain, R., Loxton, D., & Rahman, S. (2013). Mental and physical health and intimate partner violence against women: A review of the literature. *Int J Family Med*, 2013, 313909.
- European Union Agency for Fundamental Rights. (2012). Violence against women: an EU wide survey. Main results. Vienne. 4p. Retrieved August 10, 2020, from https://fra.europa.eu/en/publications-and-resources/data-and-maps/survey-data-explorer-violence-against-women-survey
- Fanslow, J., Silva, M., Whitehead, A., & Robinson, E. (2008). Pregnancy outcomes and intimate partner violence in New Zealand. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 48(4), 391–397. https://doi.org/10.1111/j.1479-828X.2008.00866.x
- French Ministry of Gender Equality (2021). La Maison des femmes de Saint-Denis annonce la constitution du Collectif Re#start (« The Maison des Femmes » has announced the creation the Re#start partnership).

  Retrieved December 7, 2021, from https://www.egalite-femmeshommes.gouv.fr/cp-la-maison-des-femmes-de-saint-denis-annon ce-la-constitution-du-collectif-restart-10-03-2021/
- Géry, Y. (2017). La maison des Femmes répond à un besoin de prise en charge globale des violences (The « Maison des Femmes » meets a real need of global care of female victims of violence). La Santé en Action 439: 47-9. Retrieved August 10, 2020, from https://www.fabrique-territoires-sante.org/sites/default/files/sante-action-439.pdf
- Hunter, T., Botfield, J. R., Estoesta, J., Markham, P., Robertson, S., & McGeechan, K. (2017). Experience of domestic violence routine screening in Family Planning NSW clinics. Sex Health, 14(2), 155-163.
- Husky, M. M., Lépine, J. P., Gasquet, I., & Kovess-Masfety, V. (2015). Exposure to traumatic events and posttraumatic stress disorder in France: results from the WMH survey. *Journal of Traumatic Stress*, 28(4), 275–282.
- Inter-ministerial Mission on Women Protection and Against Human Trafficking. (2018). Domestic violence and sexual violence in France in 2017. Annual indicators. La lettre de l'observatoire national des violences faites aux femmes n°13, 2018. Retrieved August 10, 2020, from https://www.stopviolencesfemmes.gouv.fr/IMG/pdf/violences\_au\_sein\_du\_couple\_et\_violences\_sexuelles\_novembre\_2018.pdf
- James, L., Brody, D., & Hamilton, Z. (2013). Risk factors for domestic violence during pregnancy: A meta-analytic review. Violence and Victims, 28(3), 359–380. https://doi.org/10.1891/0886-6708. VV-D-12-00034
- Jaspard, M. (2011). Les violences contre les femmes (Violences against women). La Découverte (Repères).
- Jaspard, M., Brown, E., Condon, S., Firdion, J. M., Fougeyrollas-Schwebel, D., Houel, A., Lhomond, B., Suarel-Cubizolles, M. J., & Schiltz, M. A. (2001). Nommer et compter les violences envers les femmes: Une première enquête nationale en France (Statistics on violences against women): A first national study in France. Population Et

- Sociétés, 364:1-4. Retrieved August 10, 2020, from https://www.ined.fr/fichier/s\_rubrique/18735/pop\_et\_soc\_francais\_364.fr.pdf
- Kiamanesh, P., & Hauge, M.-I. (2019). "We are not weak, we just experience domestic violence". Immigrant women's experiences of encounters with service providers as a result of domestic violence. *Child & Family Social Work.* 24(2), 301–308.
- Krug, E. G., Dahlberg, L., Mercy, J., Zwi, A., & Lozano-Ascensio, R. (2002).
  World Report on Violence and Health. WHO. 376p. Retrieved August 10, 2020, from https://www.who.int/violence\_injury\_prevention/violence/world\_report/en/full\_fr.pdf
- Labbe, E., Blanquet, M., Gerbaud, L., Poirier, G., Sass, C., Vendittelli, F., & Moulin, J. J. (2015). A new reliable index to measure individual deprivation: The EPICES score. The European Journal of Public Health, 25(4), 604–609.
- Leung, T. W., Leung, W. C., Chan, P. L., & Ho, P. C. (2002). A comparison of the prevalence of domestic violence between patients seeking termination of pregnancy and other general gynecology patients. International Journal of Gynaecology and Obstetrics, 77(1), 47–54.
- Liang, B., Goodman, L., Tummala-Narra, P., & Weintraub, S. (2005). A theoretical framework for understanding help-seeking processes among survivors of intimate partner violence. *American Journal* of Community Psychology, 36(12), 71–84. https://doi.org/10.1007/ s10464-005-6233-6
- Maciel, M. N. A., Blondel, B., & Saurel-Cubizolles, M.-J. (2019). Physical violence during pregnancy in France: Frequency and impact on the health of expectant mothers and new-borns. *Maternal and Child Health Journal*, 23(8), 1108–1116.
- Martín-Baena, D., Montero-Piñar, I., Escribà-Agüir, V., & Vives-Cases, C. (2015). Violence against young women attending primary care services in Spain: Prevalence and health consequences. Family Practice, 32(4), 381–386. https://doi.org/10.1093/fampra/cmv017
- McCauley, J., Kern, D. E., Kolodner, K., Dill, L., Schroeder, A. F., DeChant, H. K., Ryden, J., Bass, E. B., & Derogatis, L. R. (1995). The "battering syndrome": Prevalence and clinical characteristics of domestic violence in primary care internal medicine practices. Annals of Internal Medicine, 123(10), 737–746.
- Miller, E., Jordan, B., Levenson, R., & Silverman, J. G. (2010). Reproductive coercion: Connecting the dots between partner violence and unintended pregnancy. Contraception, 81(6), 457–459.
- Ministerial Statistical Institute of internal security. (2018). Report 2018: Living environment and safety investigation. Victimization, delinquency and feelings of insecurity. *Inter Statistics. 2018*. Retrieved August 10, 2020, from https://www.interieur.gouv.fr/Interstats/Lenquete-Cadre-de-vie-et-securite-CVS/Rapport-d-enquete-cadre-de-vie-et-securite-2018
- Overstreet, N. M., & Quinn, D. M. (2013). The intimate partner violence stigmatization model and barriers to help-seeking. *Basic and Applied Social Psychology*, 35(1), 109–122.
- Pengpid, S., & Peltzer, K. (2020). Associations of physical partner violence and sexual violence victimization on health risk behaviours and mental health among university students from 25 countries. BMC Public Health, 20(1), 937.
- Ranganathan, M., Heise, L., Peterman, A., Roy, S., & Hidrobo, M. (2021). Cross-disciplinary intersections between public health and economics in intimate partner violence research. SSM - Population Health, 15(14), 100822. https://doi.org/10.1016/j.ssmph.2021.100822
- Saint Denis Hospital Center. (2016). The hospital is setting up a generalizable econometric study on precariousness and non-recovery. Entre Nous n°13. Retrieved August 10, 2020, from http://www.chstdenis.fr/media-files/entrenous-n-13-mars-2016,232.pdf

- Sanz-Barbero, B., Barón, N., & Vives-Cases, C. (2019). Prevalence, associated factors and health impact of intimate partner violence against women in different life stages. *PLoS One*, 14(10), e0221049.
- Sarafis, C. (2009). L'intérêt du dépistage systématique des violences faites aux femmes au cours de l'entretien préalable à un avortement dans la pratique des conseillères conjugales et familiales (Systematic screening of violences against women during the consultation of family and marriage counselor). [Mémoire de diplôme universitaire de victimologie]. Paris 5 University.
- Sharman, L. S., Douglas, H., Price, E., Sheeran, N., & Dingle, G. A. (2018). Associations between unintended pregnancy, domestic violence, and sexual assault in a population of Queensland women. Psychiatry, Psychology and Law, 26(4), 541–552.
- Silverman, J. G., Decker, M. R., Reed, E., & Raj, A. (2006). Intimate partner violence victimization prior to and during pregnancy among women residing in 26 U.S. states: Associations with maternal and neonatal health. American Journal of Obstetrics and Gynecology, 195(1), 140–148.
- Stark, E., & Flitcraft, A. H. (1988). Women and children at risk: A feminist perspective on child abuse. *International Journal of Health Services*, 18(1), 97–118.
- Trevillion, K., Oram, S., Feder, G., & Howard, L. M. (2012). Experiences of domestic violence and mental disorders: A systematic review and meta-analysis. *PLoS One*, 7(12), e51740.
- United Nations Development Programme. (2017). Human Development Reports. Gender Inequality Index. Retrieved August 10, 2020, from <a href="http://hdr.undp.org/en/composite/GII">http://hdr.undp.org/en/composite/GII</a>
- United Nations Women. (2010). Defining Violence against Women and Girls. UN Women Virtual Centre to End Violence Against Women and Girls. Retrieved August 10, 2020, from https://www.endvawnow.org/en/articles/295-dfinition-de-la-violence-contre-lesfemmes-et-les-filles.html
- World Health Organization. (2005). WHO multi-country study on women's health and domestic violence against women. Retrieved August 10, 2020, from https://www.who.int/reproductivehealth/publications/violence/24159358X/en/. Accessed March 17, 2022.
- World Health Organization. (2010). Violence against women: A global health problem of epidemic proportions. Retrieved August 10, 2020, from https://www.who.int/news-room/fact-sheets/detail/violence-against-women
- World Health Organization, Regional Office for the Eastern Mediterranean. (2013). WHO Ethical and safety recommendations for researching, documenting and monitoring sexual violence in emergencies. Retrieved August 10, 2020, from https://apps.who.int/iris/handle/10665/119989

How to cite this article: Roland, N., Ahogbehossou, Y., Hatem, G., Yacini, L., Feldmann, L., Saurel-Cubizolles, M.-J., & Bardou, M. (2022). Violence against women and perceived health: An observational survey of patients treated in the multidisciplinary structure 'The Women's House' and two Family Planning Centres in the metropolitan Paris area. *Health & Social Care in the Community*, 30, e4041–e4050. <a href="https://doi.org/10.1111/hsc.13797">https://doi.org/10.1111/hsc.13797</a>